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ABSTRACT

Six teachers judged as expert representatives of either Kenneth Goodman's or Caleb Gattegno's theoretical positions were videotaped while working with remedial readers eight to nine years old. Interactions were analyzed using the Analytical System of Student-Teacher Interactions in Reading (ASSTIR). Results indicated that students in both groups most often read without being interrupted, and that they discussed what they had read. When students made oral reading errors, the teachers in both groups had students work out their own errors in ways compatible with their respective framework. Patterns of responses to errors were more strongly related to teachers' previous training than to types of oral reading errors. Data from teacher interviews confirmed that the teachers' theoretical frameworks influenced their teaching. A complex view of numerous theoretical influences on the teaching of reading was suggested. (Author/RL)

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Patterns of Teacher-Student Responses to Oral Reading Errors as Related to Teachers' Previous Training in Different Theoretical Frameworks

Katherine A. Michell

Introduction and Rationale

Conventional wisdom has long recognized that mistakes and errors are integral to learning. In general, however, errors have been investigated in laboratory situations (Baddeley & Dale, 1966; Conrad, 1964, 1970; Wickelgren, 1965a, 1965b) or diagnostic settings (Corder, 1967; Gorbet, 1975; Weber, 1968). Theory and research have not focused on the use of errors as part of the teaching-learning process. This study was based on the assumption that since learning is often an outcome of teacher-student interaction, then errors and responses to errors ought to be investigated as part of this interaction.

Dyadic interaction during oral reading offered a particularly rich source for observations of teacher-student responses to errors. Although investigations of oral reading errors have been going on since the early part of this century (Madden & Pratt, 1941; McCullough, 1946; Monroe, 1928, 1932), this research did not represent theoretical positions with respect to errors and tended to view every discrepancy from a text as a deficiency which required remediation.

Recently, however, two views of reading and reading instruction were developed which provide theoretical bases for examining oral reading errors. Goodman (1965) views errors as windows on the reading process and developed the Goodman Taxonomy of Reading Miscues (1976) in an attempt to analyze oral reading errors within a psycholinguistic framework. Gattegno (1971, 1976a) suggests that mistakes and errors are always present when a person is learning something new and proposed,

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in his Subordination of Teaching to Learning framework, that insight into what causes errors offers the most valuable information for guiding instruction.

Earlier research (Steinruck, 1975) had found that teachers participating in one training session in a specific theoretical framework changed only slightly in their responses to students' oral reading. Consequently, it was reasoned that if teachers had a thorough understanding of a particular framework and extensive experience in its application in instructional settings, they would reflect this orientation in their teaching. Thus, a decision was made to study "expert representatives" of both the Goodman and Gattegno frameworks. It was further reasoned that a description of interactions that rested on a positive view of errors would be different from that described in the literature and would therefore contribute to the profession.

Most research efforts of the 1960s and 70s focused on the behavioral dimension of teaching and not on the conceptual bases from which behaviors stem (Bond & Dykstra, 1967; Harris & Morrison, 1969; Ramsey, 1962). In the last few years, researchers have recognized the need for investigations of theoretical influences on the teaching of reading (Belle, Blom, & Reiser, 1977; Harste & Burke, 1976; Morine, 1973; Shavelson, 1973). Consequently, this study proposed that a theoretical framework may be the factor from which specific behaviors flow and into which specific behaviors fit.

Several researchers have developed observation instruments for coding teacher responses to oral reading errors (Brady, Lynch, & Cohen, 1976; Brophy & Good, 1969). These coding systems, however, only record teacher behavior after a student error and are not sensitive to the

frameworks investigated in this study. Therefore, the Analytical System of Student-Teacher Interactions in Reading (ASSTIR) was developed by the investigator to enable the coding of student responses to oral reading errors, as well as teacher responses.

Studies of educational interaction have been handicapped by the lack of a data treatment that makes it possible to examine patterns of more than two sequential behaviors, although the need for such examination has been recognized (Smith, 1967). This study utilized a recent analytical technique called MACROanalysis (Shymansky, Penick, Good, & Mathews, 1975). This made possible the identification of the most frequently occurring chains of three, four, or five behaviors from the sequentially recorded observational data.

This study was exploratory. Six research questions were asked in order to determine whether patterns of teacher-student interactions in remedial reading setting were related to the teachers' previous training in specific theoretical frameworks. Emphasis was on describing and categorizing the ways that teachers and students responded when students made oral reading errors.

Methodology

Subjects

Subjects were six teachers and six remedial readers. Three teachers were named by Yetta Goodman and Carolyn Burke as expert representatives of the Goodman psycholinguistic framework; three other teachers were chosen by Caleb Gattegno as expert representatives of the Subordination of Teaching to Learning framework. In addition to being judged expert in the theoretical framework, the investigator requested the names of teachers who were known to have a minimum of

five years' teaching experience, and were willing to be videotaped while working with a student.

Each teacher was asked to choose one student with whom to work. To guide their selection, each teacher was given two passages in advance. These passages were to be used with the student in the videotaped sessions. Each teacher was asked to choose a student who (a) was 8 or 9 years old; (b) was judged by the teacher to be reading about one year below grade level and able to benefit from remedial instruction; and (c) would find the pre-selected passages difficult but not frustrating.

Text Material

Part of the text material used in the videotaped sessions was held constant. Menosky, a representative of Goodman's psycholinguistic framework, and Gattegno, originator of the Subordination of Teaching to Learning framework, each suggested two narrative passages to be used in the study. Suggested texts were judged to (a) represent a third or fourth grade reading level; (b) be difficult but not frustrating to remedial readers of age 8 to 9; and (c) be long enough to provide material for an instructional session of approximately 30 minutes.

After field testing and consultation, two passages judged most congruent with the purposes of the study were chosen. These were: "New Shoes" from A Book of Stories by C. Gattegno (New York: Educational Solutions, Inc., 1964) and "War on Small Deer" from Reading Miscue Inventory Reading Worksheets by Y. Goodman and C. Burke (New York: Macmillan Company, 1972).

It was anticipated that teachers might wish to use materials in addition to those supplied by the investigator. Teachers were asked

to supply related materials or activities if these were considered helpful to the student. It was assumed that additional materials chosen by teachers would increase the opportunities for them to work in their typical styles. The teachers' selection of additional materials might also be a potent indicator of their theoretical frameworks.

Instrument

In developing the Analytical System of Student-Teacher Interaction in Reading (ASSTIR), the investigator sought a category system which would:

1. be applicable to interactions in which a teacher is working with one child in a reading setting;

2. preserve the sequential nature of teacher-student interactions;

3. use a timed coding procedure so that the duration of uninterrupted behaviors can be ascertained;

4. be particularly sensitive to the ways that students and teachers behave when students make oral reading errors;

5. distinguish types of oral reading errors;

6. include those teacher behaviors associated with Goodman's psycholinguistic approach and Gattegno's Subordination of Teaching to Learning approach;

7. make it possible to code the overall interaction of teachers and students, not only their responses to errors.

The first phase of constructing an observational system with these characteristics consisted of studying related literature in the following areas: the analytical study of teaching, research on oral reading errors, reading interaction studies, and the concepts and

assumptions underlying Goodman's and Gattegno's frameworks. The investigator studied particularly the Goodman and Gattegno models of reading, orientations toward oral reading errors, and views of instruction.

Salient characteristics of the two frameworks were identified. Stated and implied ways of working with students drawn from both frameworks became tentative Teacher Categories. Important functionings of readers described by Goodman and Gattegno became tentative Student Categories of the same observation system.

This in-progress category system was applied to 16 hours of observations of students working with teachers trained in either Goodman's or Gattegno's framework, none of whom were subjects in the study. The ASSTIR system was then submitted to Y. Goodman, C. Gattegno, and J. McLeod, an expert in the analytical study of teaching, for their critical analysis, and ratings for content validity.

Judges' disagreements were resolved by consulting with those who indicated initial disagreement for opinions, discussion, and reratings. When revisions occurred, the categories were submitted to the judges for another cycle of ratings. These procedures were followed until all criteria set for validity were met.

The ASSTIR system is a 43-category observation instrument. Twenty-four categories are teachers' behaviors; 19 are students' behaviors. ASSTIR uses a coding cycle in which student and teacher behaviors are coded every three seconds or when there is a change in behavior in less than three seconds. An overview of ASSTIR is found in Table 1.[1]

Insert Table 1 about here

Procedures

One month before they were videotaped, the six teachers who volunteered to participate in the study were sent an explanation of their involvement. Teachers were instructed to have two instructional sessions with their student, with a break of 15 to 30 minutes between the two. Teachers were asked to work as they usually do with students who are reading orally. It was explained that the two passages should provide material on which to work for 30 to 45 minutes, but that teachers could spend as much time as was needed for each text. Teachers were informed that videotaping would continue for as long as the teacher and student were working, and that they should feel no obligation to finish the entire passage, or to stretch the duration of their work.

Gattegno teachers were videotaped in the New York City metropolitan area. Goodman teachers were videotaped at Indiana University. The total amount of interaction videotaped for both groups was 179 minutes for Goodman teachers and 177 minutes for Gattegno teachers.

The investigator was present at all videotaping sessions. After each teacher was videotaped, the researcher interviewed him/her so that the situation could be more fully interpreted. This interview lasted from 45 minutes to an hour and was audiotaped.[2]

Observer Training and Reliability

Interobserver reliability for the investigator and a second observer was established three times and intraobserver reliability

Table 1

Overview of the ASSTIR System

Division of Categories	Subdivision of Categories	Code	Category Titles
Teacher Behaviors	Goodman Categories 1-6	1	Asks Student to Predict
		2	Encourages Student to Reread
		3	Asks Student to Consider Syntactic Cues
		4	Asks Student to Consider Semantic Cues
		5	Asks Student to Mobilize Experiences
		6	Encourages Student Search and Self Inquiry
	Gattegno Categories 7-12	7	Asks Student to Focus Awareness on Detail
		8	Provides Opportunity to Practice
		9	Appeals to Affectivity
		10	Asks Student to Search for Error
		11	Builds on Student's Previous Knowledge of Sign-Sound Correspondences
		12	Comments on Student's Functioning
	Categories Related to Any Dyadic Reading Interaction 13-24	13	Inquires About Comprehension
		14	Gives Explanation or Additional Information
		15	Confirms that Student Is Correct
		16	Indicates that Student Is Incorrect
		17	Tells Student the Word/Words
		18	Praises with Criteria
		19	Inhibits, Scolds or Ridicules the Reader
		20	Asks Student to Read
		21	Asks Student to Continue Reading
		22	Asks Student to Reread
		23	Invites Student to ConstructText Material
		24	Other Teacher Behavior
Student Behaviors	Categories of Errors A-D	A	Error Which Is Syntactically and Semantically Unacceptable
		B	Error Which Is Syntactically Acceptable but Semantically Unacceptable
		C	Error Which Is Syntactically and Semantically Acceptable
		D	Error in an Isolated Word
	Correction Behavior L-V	L	Student Initiated Correction Attempt
		M	Student Initiatied Correction
		N	Teacher Initiated Correction Attempt
		V	Teacher Initiated Correction
	Reading Behavior E-S	E	Regresses (Student Initiated)
		F	Rereads (Teacher Initiated)
		R	Oral Reading
		S	Silent Reading
	Categories Related to Any Dyadic Reading Interaction H-Z	H	Hesitates
		Q	Asks Teacher a Question
		K	Reveals Meanings Obtained from Text
		P	Predicts what Story Will Be About
		T	Talks About Experience
		Y	Constructs Text Material
		Z	Other Student Behavior

was established once. In this study agreement on the sequence of coding was as important as agreement on assignment of behaviors to categories. Therefore, in order to determine intercoder reliability, the following formula was used:

$$A = \frac{(U - D)}{(U + \frac{1}{2} X)}$$

where A = intercoder reliability, U = total number of codes designated by both observers, D = total number of disagreements between coders on the same behavior, and X = the total number of behaviors scored by one observer but not the other (Fleiss, Cohen, & Everitt, 1969; Pickert & Sgan, 1977).

Intercoder reliability computed at three points during the analysis of the video tapes was .96, .95, and .96. At the midpoint of the video tape analysis, an intraobserver reliability check indicated the percentage of agreement to be .95.

Results and Interpretation of Data

The first two research questions concerned how overall interactions between teachers and students in the Goodman and Gattegno groups were related to teachers' previous training in reading. Research Question 1 asked: Are the behaviors of teachers in remedial reading settings related to behaviors associated with the teachers' previous training in reading?

To answer this question, the Goodman and Gattegno frequency data for the 43 categories of the ASSTIR system were utilized. The two groups were compared in the use of each of these behaviors by a test of the significance of the difference between two proportions for uncorrelated groups (Dixon & Massey, 1969).

Categories 1-6 of the ASSTIR system were operationally defined as behaviors associated with Goodman's framework and Categories 7-12, as behaviors associated with Gattegno's framework. Findings indicated that the behaviors of Goodman and Gattegno expert representatives were related to behaviors associated with their previous training ($p < .01$).

Insert Table 2 about here

Table 2 shows that Gattegno teachers used all six behaviors associated with training in Gattegno's framework significantly more frequently than Goodman teachers. Goodman teachers used two behaviors associated with training in Goodman's framework significantly more frequently than Gattegno teachers. In addition, Gattegno teachers showed a wider variety of behaviors than Goodman teachers. While Gattegno teachers used four of the six behaviors associated with training in Goodman's framework, Goodman teachers never used any of the six behaviors associated with training in Gattegno's framework.

Other findings perhaps as indicative of the training of these expert representatives were that in both the Goodman and Gattegno groups, the ratio of child behavior to teacher behavior was approximately 3 to 1. That is, in both groups children were responding overtly about 75% of the time. In addition, examination of the categories of students' behaviors (Categories A-Z) indicated that what students did was in keeping with what teachers asked them to do. These were evident in an examination of total interaction and could have been missed if only the behaviors associated with the teachers' previous training had been examined.

Table 2

Teachers' Use of Behaviors Associated with Goodman's and Gattegno's Frameworks

Code	Category Titles	Goodman (N = 3,690) f	Goodman (N = 3,690) p	Gattegno (N = 3,555) f	Gattegno (N = 3,555) p	z
	Behaviors Associated with Goodman's Framework					
1	Asks student to predict	32	.0087	5	.0014	4.29***
2	Encourages student to reread	0	0	0	0	
3	Asks student to consider syntactic information	0	0	0	0	
4	Asks student to consider semantic information	1	.0003	4	.0011	1.29
5	Asks student to mobilize experience	73	.0198	30	.0084	4.07***
6	Encourages student search and self inquiry	11	.0030	21	.0059	1.81
	Total (Categories 1-6)	117	.0317	60	.0128	24.67***
	Behaviors Associated with Gattegno's Framework					
7	Asks student to focus awareness on a detail	0	0	82	.0230	9.20***
8	Provides opportunity to practice	0	0	7	.0020	2.86**
9	Appeals to affectivity	0	0	13	.0037	3.70**
10	Asks student to search for error	0	0	72	.0203	8.46***
11	Asks student to build on previous knowledge of sign-sound correspondences	0	0	45	.0217	6.68***
12	Comments on student's functioning	0	0	50	.0141	7.05***
	Total (Categories 7-12)	0	0	269	.0737	61.62***

**$p < .01$

***$p < .001$

Research Question 2 asked: What are the patterns of teacher-student interactions in remedial reading settings? Are these patterns related to the teachers' previous training in reading? To answer Question 2, the 25 most frequent three-code patterns of interaction were identified for both the Goodman and Gattegno groups. The groups were compared in the use of each of these patterns by the same test of the significance of the difference between two proportions.

Results showed that there were many similarities in what the Goodman and Gattegno teachers and students did most often. For example, 36 different three-code patterns of interaction were found among the top-ranking patterns for both groups. Of these 36, 28 were the same for both the Goodman and the Gattegno groups. These are displayed in Table 3 and indicate that in both groups, students were most often reading uninterruptedly and discussing what they had read. Uninterrupted student behavior is represented by three consecutive letters of the alphabet, such as R C R, E M R, or R B R. Patterns which show that teachers were inquiring about comprehension (Category 13) and students were discussing what they had read (Category K) are those such as 13, K, 13 or K, 13, K.

Insert Table 3 about here

When the most frequent individual patterns were compared according to the proportion of all patterns they represented, however, there were differences which appear related to the teachers' previous training in reading. Results indicated that in the Goodman group, students were reading uninterruptedly (R C R, E M R, R B R, C R C,

Table 3

Most Frequent Common Patterns of Interaction in Goodman and Gattegno Groups

Pattern	Goodman (N = 1,628) f	Goodman (N = 1,628) p	Gattegno (N = 2,258) f	Gattegno (N = 2,258) p	z
R C R	72	.0442	25	.0111	6.49***
E M R	32	.0197	30	.0133	1.56
13, K, 13	39	.0240	23	.0102	3.36**
K, 13, K	40	.0246	20	.0089	3.93**
R B R	37	.0227	17	.0075	4.00***
C R C	41	.0252	8	.0035	6.03***
R E R	19	.0117	20	.0089	.87
M R C	27	.0166	11	.0049	3.66**
13, K, 15	21	.0129	17	.0075	1.69
R A R	20	.0123	18	.0080	1.34
C R B	21	.0129	9	.0040	3.18**
13, H K	18	.0111	7	.0031	3.08**
M R B	14	.0086	10	.0044	1.68
K, 15, 13	13	.0080	11	.0049	1.24
R A M	11	.0068	13	.0058	.40
A M R	11	.0068	10	.0044	1.00
M R A	8	.0049	13	.0058	.38
C R E	15	.0092	4	.0018	3.21**
15, 13, K	12	.0074	7	.0031	1.87
24, Z, 24	9	.0055	10	.0044	.48
T 5 T	13	.0080	5	.0022	2.64**
5 T 5	12	.0074	4	.0018	2.67**
A E M	5	.0031	11	.0049	.85
5 T, 24	14	.0086	1	.0004	4.10***
R C E	11	.0068	4	.0018	2.50*
R, 13, K	4	.0025	11	.0049	1.20
A R C	12	.0074	2	.0009	3.42**
B R C	11	.0068	3	.0013	2.89**

*$p < .05$

**$p < .01$

***$p < .001$

Note. Student behaviors are coded by letters of the alphabet. Teacher behaviors are coded by numerals. Please see Table 1 for an explanation of codes.

M R C, C R B, C R E, R C E, A R C, B R C), discussing what they had read (13, K, 13, K, 13 K; 13, H K), and talking about their experience in general (5, T 24; T 5 T) significantly more often than in the Gattegno group. These results support a trend in the Goodman group toward heavier use of fewer patterns and a trend in the Gattegno group toward less frequent use of more patterns.

Eight of the 36 most frequent patterns of interaction occurred in one group but not in the other. These patterns occurred significantly more frequently than zero ($p < .001$) and were interpreted to be related to the teachers' previous training. Patterns which occurred only in the Goodman group were those of teachers' inviting students to make up stories and subsequent student construction of texts. Patterns which occurred only in the Gattegno group were those of uninterrupted student rereading and those involving teachers' requests that students search for their errors or focus awareness on details and subsequent teacher-initiated correction attempts and corrections by students.

Research Questions 3 and 4 concerned how the Goodman and Gattegno patterns of responses to oral reading errors were related to the teachers' previous training in reading. For both questions the types of oral reading errors specified in this study (Categories A, B, C, and D) were ignored. All error types were combined into one category (Category G) and called "error." The purpose in answering questions 3 and 4 was to examine the differences in responses to errors in general by expert representatives in two frameworks.

To answer questions 3 and 4 the five-code patterns that began with an oral reading error were examined for both groups. By using

the longest possible pattern length (5), four-code patterns which followed the errors could be analyzed.

Research Question 3 asked: What are the patterns of teacher-student responses to students' oral reading errors? Are these patterns related to the teachers' previous training in reading?

Examination of the most frequent Goodman and Gattegno patterns of responses to oral reading errors indicated that the majority of the top-ranking patterns in both groups were of students continuing to read without an overt response from the teacher. These patterns contain only letters of the alphabet, such as R G R G. Table 4 indicates, however, that when the individual patterns were compared according to the proportion they represented of the total patterns, five patterns of sustained student responses to oral reading errors were found to occur significantly more often in the Goodman group than in the Gattegno group. Therefore, this response of sustained student reading is more characteristic of the Goodman group than of the Gattegno group.

Insert Table 4 about here

Among the top-ranking patterns of responses to errors, two were unique to the Gattegno group and occurred significantly more frequently than zero ($p < .05$). These two patterns indicated that when students made errors, Gattegno teachers most often responded by asking students to search for their errors and that this was followed by students' correcting themselves and continuing to read on.

Whereas Research Question 3 dealt with patterns of responses to errors, Research Question 4 concerned the teacher behaviors contained

Table 4

Most Frequent Patterns of Teacher-Student Responses to Oral Reading Errors Common to Both Groups

	Goodman (N = 232)		Gattegno (N = 229)		
Pattern	f	p	f	p	z
R G R G	41	.1768	11	.0480	4.37***
M R G R	17	.0733	9	.0393	1.58
E M R G	17	.0733	8	.0349	1.82
R G R E	19	.0819	5	.0218	2.90**
R G M R	19	.0819	4	.0175	3.17**
R G E M	13	.0560	2	.0087	2.87**
R E M R	10	.0431	5	.0218	1.29
P E R G	12	.0517	3	.0131	2.34*
M R A M	5	.0216	2	.0087	1.13
R, 13, K, 13	5	.0216	1	.0044	1.62
R G R, 13	4	.0172	1	.0044	1.33
E M R H	1	.0043	3	.0131	1.01

*p < .05

**p < .01

***p < .001

in those patterns. Research Question 4 asked: Are the patterns of teacher-student responses to oral reading errors related to behaviors associated with the teachers' previous training in reading.

To answer question 4, the four-code response patterns which followed the error and which contained a teacher behavior were identified for both groups. There were 25 such Goodman response patterns to errors and 142 Gattegno patterns which contained teacher behaviors. Findings indicated that Goodman teachers did not interrupt students during the reading process to respond to errors. After students finished reading, Goodman teachers responded to the overall patterns of errors by selecting commercial passages with specific characteristics for subsequent reading. Goodman teachers responded to individual errors by creating teacher-made texts which placed isolated errors in predictable contexts.

Based on these characteristics it can be said that there is a positive answer to whether the Goodman patterns of teacher-student responses to errors were related to behaviors associated with their training. This would hold only if those behaviors are considered in a broader context than Categories 1-6 of the ASSTIR system. In the broader context of the entire videotaped interaction and based on the Goodman teachers' comments in the interviews, the Goodman patterns of responses to oral reading errors were compatible with training in that framework.

An examination of the Gattegno response patterns to errors indicated that in 62% of the Gattegno teacher-student response patterns to errors, teachers provided feedback to students during the reading process. Of the 142 Gattegno response patterns that contained teacher

behavior, 60% contained at least one behavior associated with previous training in Gattegno's framework (Categories 7-12 of the ASSTIR system). When Gattegno teachers responded to errors, they most often did so by asking the student to search for the error.

Data indicated further that after students had tried unsuccessfully to correct an error, Gattegno teachers became more pin-pointed in their feedback to students by indicating the detail which needed more attention (Category 7) or by commenting on the student's functioning which they thought was producing the error (Category 12). On the occasions when Gattegno students were working to correct an error, Gattegno teachers also appealed to students' affectivity (Category 9).

Perhaps one of the most interesting findings of this study was that in neither group did the teachers ever tell students an answer nor praise student performance. The expert representatives of the Goodman and Gattegno frameworks seemed to agree that students need to work out their own errors. The ways that the teachers encouraged students to work out their errors, however, differed and were consistent with what the respective frameworks suggested.

Research questions 5 and 6 were concerned with the relation between patterns of responses to oral reading errors and types of oral reading errors. In this study, four types of errors were distinguished:

1. Syntactically and semantically unacceptable (Type A);
2. Syntactically acceptable but semantically unacceptable (Type B);
3. Syntactically and semantically acceptable (Type C);
4. Errors in isolated words (Type D).[3]

Research Question 5 asked: Are the patterns of teacher-student

responses to errors related to the types of oral reading errors? To answer this question, the patterns which followed each of the error types were inspected for both groups. All response patterns were grouped into one of three clusters: sustained student behavior with no corrections, sustained student behavior with corrections, and patterns containing some teacher feedback about the error. A descriptive analysis was carried out for both the Goodman and Gattegno groups.

In the Goodman group, 293 response patterns to different types of errors were examined. Table 5 shows that patterns containing Goodman teacher feedback about errors were the least frequent response after all error types. Even these patterns, however, were not truly teachers' feedback about errors, but were teacher behaviors which occurred after students finished reading and began a new activity.

Insert Table 5 about here

Thus, since Goodman teachers did not respond overtly while students were reading, Research Question 5 was best answered by examining whether student responses to errors were related to the types of oral reading errors. Three trends in Table 5 support an affirmative answer: (a) Syntactically and semantically unacceptable errors (Type A) were corrected by Goodman students more often than not. (b) Goodman students were as likely to correct as to leave uncorrected errors which were syntactically acceptable but semantically unacceptable (Type B). (c) Syntactically and semantically acceptable errors (Type C) were left uncorrected by Goodman students more often than not.

In the Gattegno group, 223 response patterns to error Types A,

Table 5

Distribution of Clustered Goodman Response Patterns by Error Type

	Error Types					
	A (N = 56)		B (N = 79)		C (N = 158)	
Clusters	f	p	f	p	f	p
Cluster 1: Sustained Student Behavior, with No Corrections	23	.4107	37	.4683	81	.5126
Cluster 2: Sustained Student Behavior, with Corrections	32	.5714	36	.4557	59	.3734
Cluster 3: Teacher Feedback	1	.0179	6	.0759	18	.1139
Totals	56	1.0000	79	1.0000	158	1.0000

B, and C were examined. Table 6 indicates that 130 of the 223 patterns, or 58%, contained teacher feedback about errors.

Insert Table 6 about here

Trends indicate that what Gattegno teachers and students did when students made oral reading errors was related to the type of oral reading error. The strongest trends were that (a) Gattegno students tended to leave syntactically and semantically acceptable errors (Type C) uncorrected more often than other error types; (b) Gattegno students corrected errors which were syntactically and semantically unacceptable (Type A) more often than other types of errors; and (c) response patterns containing teacher behaviors were most common after errors which were syntactically acceptable but semantically unacceptable (Type B).

Other trends indicated that patterns containing teacher behaviors were the most frequent Gattegno response to all error types, and patterns containing Gattegno student correction behavior were the second most frequent response to all error types. These findings suggest that Gattegno expert representatives asked for a more exact reading and that Gattegno students gave it.

Research Question 6 asked: Are the patterns of teacher-student responses for each error type related to the teachers' previous training in reading? To answer this question, the Goodman and Gattegno groups were compared in the use of each of the four-code patterns of responses which followed error Types A, B, and C. Trends in both the Goodman and Gattegno groups suggest that patterns of responses to each error

Table 6

Distribution of Clustered Gattegno Response Patterns by Error Type

	Errors					
	A (N = 75)		B (N = 70)		C (N = 78)	
Clusters	f	p	f	p	f	p
Cluster 1: Sustained Student Behavior, with No Corrections	4	.0533	8	.1143	15	.1923
Cluster 2: Sustained Student Behavior, with Corrections	33	.4400	14	.2000	19	.2436
Cluster 3: Teacher Feedback	38	.5167	48	.6857	44	.5641
	75	1.0000	70	1.0000	78	1.0000

type were related to the interaction of (a) the type of error and (b) the teachers' previous training.

Examination of Table 7 reveals, for example, that the pattern R C R C occurred significantly more often in the Goodman group than in the Gattegno group after error types A, B, and C. This finding suggests that training in Goodman's framework was a stronger influence on patterns of responses to errors than the type of error. That is, regardless of the type of error, Goodman students significantly more than Gattegno students responded by continuing to read (R) and to make additional Type C errors (C). The fact that two patterns (R C R B and R C R E) occurred significantly more frequently in the Goodman group only after Type C errors suggests that response patterns to errors were also related to types of oral reading errors.

Insert Table 7 about here

Trends in the Gattegno group indicate that responses to errors were related to the type of error as well as to training in Gattegno's framework. For example, after error Types B and C, the pattern R, 10, V R occurred significantly more often in the Gattegno group than in the Goodman group. This pattern means that when students did not correct themselves but continued to read (R), teachers asked students to search for their error (10). Students responded by correcting themselves (V) and continuing to read (R). Since students initiated corrections least often after error Types B and C, it is reasonable that the R, 10, V R pattern would most often follow these error types in the Gattegno group.

Table 7

Significantly Different Patterns of Responses to Error Types A, B, and C for Goodman and Gattegno Groups

Error Type	Pattern	Goodman p	Gattegno p
A	R C R C	.0893**	0
B	R C R C	.0886*	.0143
	R, 10, V R	0	.0714*
C	R C R C	.1329**	.0256
	R C R B	.0759*	.0218
	R C R E	.0570*	0
	R, 10, V R	0	.0256*
	E M R H	0	.0256*

*$p < .05$

**$p < .01$

Interview Data

Data from teacher interviews supported quantitative data and provided information about aspects of the teachers' theoretical frameworks which influenced their teaching. Teachers described how their models of reading affected their interactions with students. In addition, however, findings indicated that assumptions beyond these teachers' views of reading were powerful influences on the teaching of reading. Teachers reported that their views of the powers children bring to instructional settings, the purpose of instruction, the nature of human learning, the teacher-student relationship, and student independence were also related to their instructional decision-making. A more complex view than was initially proposed of theoretical frameworks and theoretical influences on teaching was indicated by interview data.

Discussion and Implications

In research which studies expert teachers from two theoretical frameworks, it may be easy to assume that the two groups of teachers are essentially different. However, a striking finding of this study was the many similarities between Goodman and Gattegno teachers. For example, findings contradicted previous research which found that teachers most often give the answer or ask another student to answer when a student responds incorrectly (Alpert & Hummel-Rossi, 1976; Brophy & Good, 1970; Ely, 1978).

There are several similarities in the Goodman and Gattegno frameworks which suggest that these two groups would exhibit some similarities in their overall patterns of interaction as well as in their patterns of responses to oral reading errors. In both frameworks,

reading errors are not viewed as deficiencies to be remediated but as valuable guides to instruction. Errors are not thought of as products which need to be changed, but rather as possibilities for gaining insights into the reading and learning processes. Both frameworks view children as language users and consider it essential to stress children's strengths rather than their weaknesses.

A stress on students' strengths may also account for the fact that these expert representatives did not behave as others do when they work with remedial students (Brophy & Good, 1970; Rowe, 1973; Terry & Cohen, 1977). Teacher educators might consider the relation between being well trained in a theoretical framework and teachers' assumptions about the learning abilities of children. What kind of knowledge base provides prospective teachers with an understanding of the language competencies of children? Which skills make it possible for reading instruction to be compatible with the language abilities and learning capacities of children?

While there were similarities in the Goodman and Gattegno groups, there were also differences. Although both the Goodman and Gattegno perspectives emphasize that teachers need to build on students' abilities so that reading is acquired naturally, results showed that the ways the two groups responded to errors were different. The models of reading and the views of the teaching-learning process appear to be related to these differences.

Goodman's model of reading suggests that the syntactic, semantic, and graphophonic systems of language are interdependent and interactive. Reading is defined as those interactions with print which yield comprehension and reading instruction aims at maintaining the language

systems intact (Goodman, 1976; Goodman & Goodman, 1976). Gattegno, on the other hand, states that there are different models of reading, depending on the purposes for reading and the proficiency of the reader. Accuracy is thought to be important to most types of reading, and reading instruction aims at giving students criteria for knowing how to read exactly what is written (Gattegno, 1968, 1976b).

Influences of the models of reading were shown particularly in the student behaviors which each of the groups encouraged. For example, Goodman students made more errors than Gattegno students. Fifty-six percent of the Goodman student errors, however, were syntactically and semantically acceptable. The predominance of errors that retained meaning may be attributed to: (a) an uninterrupted reading condition and (b) the abundance of predictable texts supplied by Goodman teachers.

In contrast, Gattegno students showed significantly more teacher-initiated correction behavior than Goodman students. Observation of the video tapes indicated further that Gattegno students were able to correct themselves on all occasions when their teachers asked them to work on their errors. It is the opinion of this investigator that students were able to correct themselves in all cases because Gattegno teachers responded to errors in ways that helped students perceive what to do in order to make the correction.

Differences in the Goodman and Gattegno patterns of interaction in reading settings were also influenced by the Goodman and Gattegno views of the teaching-learning process. In summary, interview data support that Gattegno patterns of teacher-student interaction stem from a model of reading which stresses an exact rendition; a view of the teaching-learning process as a continuous two-way exchange; a view

of learning which considers consciousness to be that which is educable in humans and which considers that student independence progresses as students acquire the criteria needed to rely only on themselves. On the other hand, Goodman patterns of teacher-student interaction grow out of a model of reading which stresses that readers start with some hypotheses about meaning and sample print to either confirm or disconfirm their predictions; a view of the teaching-learning process which stresses implicit learning; and a conviction that student independence is best achieved by having students rely only upon themselves during the act of reading.

What seems especially critical for researchers on theoretical influences on the teaching of reading is that theoretical frameworks, as described in this study, include a number of concepts which result in a wide variety of teaching behaviors. A theoretical framework, then, is not to be confused with a methodology. Researchers might investigate the relation between the complexity of various frameworks and the ways that teachers operating within those frameworks go about making decisions while teaching.

Results from the present study most particularly support two findings from pilot studies of Harste (1977): (a) Student reading performance does in part mirror the nature of reading instruction and (b) Teachers' responses to students' oral reading errors seem particularly illuminating of the teachers' theoretical orientations toward reading. In addition, however, findings suggest that assumptions beyond the teachers' views of reading are powerful influences on the teaching of reading.

Consequently a fundamental issue for researchers of teachers'

orientations toward reading seems to be whether that focus is a sufficiently inclusive construct for studying and explaining the most important influences on the teaching of reading. Findings of this study suggest that a more comprehensive examination which includes several constructs might provide more useful information.

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Footnotes

[1]A more detailed account of the validation procedures, the definitions and examples for all categories, the coding sheet, and the directions for coding of the ASSTIR system are available from the investigator upon request.

[2]The interview form, sample transcripts, and a detailed account of these interviews are available upon request from the author.

[3]A thorough description of how errors are classified is contained in the ASSTIR system and is available from the author upon request.